ANALYSIS OF THE GLOBAL COMPETITIVENESS INDEX: KEY FACTORS FOR MEXICO

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ABSTRACT

The World Economic Forum created the Global Competitiveness Index (GCI) to assess and compare competitiveness among nations, given that a competitive country tends to offer better living conditions to its population. The objective of this study was to identify the factors that influence a country's competitiveness according to the 2019 GCI and to conduct a specific analysis of Mexico. To this end, a cluster analysis was performed to classify all countries into low, medium, and high competitiveness categories. The possible reasons behind Mexico's poor performance in this index were investigated. The results revealed that innovation capacity and ICT adoption are key factors that distinguish the most competitive countries from the least. Although Mexico stands out for its economic stability and significant market size, it has significant deficiencies in areas such as education, innovation, and institutions. However, simply increasing the budget allocated to research and development does not guarantee greater innovative capacity, as adequate infrastructure and trained human capital are required to effectively implement innovation.

Keywords: systemic competitiveness, GDP, institutions, government, innovation.

INTRODUCTION

Addressing competitiveness involves understanding the problems of the development scenario of national economies in a global economic context, and considering the different factors required by different economies, particularly those in the process of development (Suñol, 2006). In this sense, a nation's competitiveness should not be viewed as an increase in investment in certain sectors of a country's

economy, but rather as the result of a combination of various factors, such as the productive structure and the formulation of public policies implemented by governments, which lay the foundation for competitiveness in the regions and economic sectors involved.

Competitiveness indicators are useful for comparing one economy with another, and there are institutions specialized in competitiveness analysis. One of them is the World Economic Forum (WEF), which has published the Global Competitiveness Report (GCR) since 1979. This index establishes an international competitiveness ranking using the Global Competitiveness Index (GCI). The WEF (Schwab, 2019) defines competitiveness as "the set of institutions, policies, and factors that determine an economy's level of productivity". The GCI is an information tool when developing and justifying public policy decisions, such as the formation of physical and human capital, investment in innovation, and the development of competition policy (Lall, 2001, p.1505)

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The GCI has been criticized for its methodology (Lall, 2001), lack of theoretical support (Dong-Sung & Hwy-Chang, 2000), and the origin of its data (Benítez-Márquez *et al.*, 2022). This indicator is characterized by assigning equal weight to the 12 pillars of competitiveness without theoretical justification, using information from official institutions in each country, conducting an opinion survey of the business sector, and considering economic and social variables. However, it omits issues related to the environment and economic specialization. Furthermore, it measures all countries equally, without considering individual characteristics such as size, economic development, preference for certain types of policies, and attractiveness to foreign investment, which are determining factors in the heterogeneity of relations between countries (Kudła *et al.*, 2023).

In this exercise, the performance of the GCI was analyzed using information published through 2019, given its importance as a benchmark in systemic competitiveness studies and because it presents the state of the global economy prior to the health emergency and the conflict between Russia and Ukraine. The results are aimed at answering the questions: according to the GCI, what determines a country's competitiveness? or how can a nation with low or medium competitiveness level rise?

Thus, the objective of this study was to analyze the characteristics shared by countries with a similar competitive level according to the Global Competitiveness Index, to identify opportunities for Mexico. The premise of this contribution is that competitiveness is intrinsically linked to a nation's structural elements. Furthermore, this work contributes to the existing debate about what makes countries competitive.

Literature review

Evolution of theories on competitiveness

Smith (1776) laid the foundations for the theory of international trade and absolute advantage. Ricardo (1817) complemented this theory with the theory of comparative advantage, which establishes the choice to produce those goods that make the most efficient use of resources and import those that are cheaper to produce. Both theories were based on resource availability, cheap labor, and climatic conditions; however, the rise of industrialized capitalism motivated the intensive use of science and technology (Chesnais, 1990). Both theories were based on the availability of resources, cheap labor and climatic conditions, however, the emergence of industrialized capitalism motivated the intensive use of science and technology (Chesnais, 1990).

Both absolute and relative advantage emphasize that a competitive country is one that benefits from international trade. Aghion & Howitt (2009) explain that international trade has benefits such as the diffusion of knowledge from more advanced to less developed countries and an increase in each country's domestic productivity. Krugman (1994) and Porter (1991) consider that it is firms, not nations, that compete for market share. The international competitiveness of nations is associated with rivalry, as it refers to their performance relative to other countries (Voinescu & Moisoiu, 2015). Subsequent theories addressed other principles aimed at improving a country's export capacity.

For Krugman (1996), theories that link competitiveness with international trade constitute a mercantilist view that uses the pretext of generating employment to access markets. He also asserts that a country can trade goods thanks to productive and territorial specialization. On the other hand, the Offshoring Theory suggests that territorial specialization is no longer a determining factor of productivity, since activities that require low-skilled labor can be carried out in any territory without falling into diminishing returns, so that a product can be designed in country A but manufactured in country B and increase the GDP of country A (Grossman & Rossi-Hansberg, 2008).

Various definitions of competitiveness suggest that, for companies, it simply implies a sustained increase in investment and trade ties that maintain them in the global market. However, a current review of the concept clarifies that competitiveness is much more complex if we want to understand the behavior of economies that compete internationally. Thus, it is necessary to recognize that achieving true, sustained competitiveness over time will require the implementation of various policies to address the obstacles that may hinder its attainment.

In this sense, Porter (1991) states that the competitiveness of a country is achieved through the productivity of companies, in turn productivity is achieved

through innovation and the efficiency of the workforce, thus the factors that induce the generation of competitive advantages of a nation are born, fundamentally, from improvement, innovation and change. Moon and Peery (1995) cited by Bhawsar and Chattopadhyay (2015) explain that while competitiveness is the position compared to competitors, productivity is the ability to obtain that position.

Both Porter (1990) and the Economic Commission for Latin America and the Caribbean [CEPAL by its acronym in Spanish] (Velásquez, 1995) suggest increasing labor productivity to reduce costs. While the overexploitation of labor, the exchange rate favoring developed economies, and trade barriers provide comparative advantages (Guzmán, 1997) and the objective of remaining in the market is met, there is no real effect on improving the population's standard of living.

A broader approach is structural competitiveness, which considers innovation a key factor, but for it to be achieved, it must be supported by the institutional capacity to foster it (Esser *et al.*, 1996; Otero *et al.*, 2006). Thus, the competitiveness of economies is an effect of the development of business modernization policies: technology, workforce and labor relations, equipment, and reorganization of work processes.

Based on structural competitiveness, Esser *et al.* (1994) propose the concept of systemic competitiveness, which is based on a set of interrelated measures aimed at specific objectives at four analytical levels of the system (meta, macro, meso, and micro). Thus, the objective of a country's competitiveness is to create the conditions for companies, sectors, and regions to be more productive and efficient, as this will result in better living conditions for the population (Birnie *et al.*, 2019; Parola *et al.*, 2016; Romo & Abdel, 2005; Velásquez, 1995).

Competitiveness according to the Global Competitiveness Index

According to Sala-I-Martin (2004), the GCI was created to complement the Growth Competitiveness Index developed by Jeffrey D. Sachs and John W. McArthur, and the Business Competitiveness Index developed by Michael Porter, under the premise that the macroeconomic and microeconomic determinants of competitiveness should not be separated, since the ability of companies to prosper depends on institutional effectiveness (Sala-I-Martin & Artadi, 2005).

Sala-I-Martin (2004) explains that the economic process depends on the macroeconomic environment, the quality of public institutions, and technology. Sala-I-Martin & Artadi (2005) defined competitiveness, for the GCI, as "the set of institutions, policies, and factors that determine a country's level of productivity; the level of productivity, in turn, establishes the sustainable level of prosperity that a country can achieve". The World Economic Forum (WEF) (Schwab, 2019: 2) updated the previous definition, identifying competitiveness as "the attributes and qualities of an economy that enable more efficient use of production factors".

The GCI was updated in 2018. Previously, each pillar had a different weight without a theoretical justification; after the update, all pillars had the same weight, since the WEF considered that economies should perceive the pillars that measure the degree of competitiveness of an economy from a holistic approach, being able to focus on their competitiveness without focusing on a single factor in particular and thus a good performance in one pillar does not compensate for a weak performance in another (Schwab, 2018).

METHODOLOGY

To accomplish the objective of this study, the analysis was conducted using a quantitative approach, as it is the most appropriate for comparing and processing the GCI database. The study has a correlational scope, as it seeks to understand the behavior of the competitiveness pillars that comprise the index and how they specifically affect Mexico.

It should be noted that until 2017, the GCI consisted of three sub-indexes: 1) Core Requirements, 2) Efficiency-Enhancing Factors, and 3) Innovation and Factor Sophistication. Beginning in 2018, with the Fourth Industrial Revolution (4IR), the new Global 4.0 index was introduced. This index emphasizes human capital, innovation, resilience, and agility as hallmarks of economic success in the 4IR. The index covers 141 economies, representing 99% of global GDP.

The GCI 4.0 is the aggregate product of 103 individual indicators, derived from a combination of data from individual organizations as well as the WEF Executive Opinion Survey. The indicators are organized into 12 pillars (Table 1). The GCI presents the results of each of its components as a "progress score" on a scale of 0 to 100, with 100 representing the "frontier," an ideal state in which the problem no longer hinders productivity growth. Each country should aim to approach the frontier in each component of the index. This approach underscores that competitiveness is not a zero-sum game between countries: it is achievable for all countries (Schwab, 2019).

In the initial phase of the analysis, a database was created using Excel software based on the 12 pillars of the GCI applied to 141 countries. 2019 was considered as it was the last year with complete data available. Furthermore, this period reflects the economic situation prevailing before the health emergency.

Using the database, the overall performance of the indicator and the performance of each country were examined using descriptive statistics using IBM SPSS Statistics (version 24). A cluster analysis was then performed to group countries with similar competitiveness to identify and compare the factors determining each

Table 1. The 12 pillars of the Global Competitiveness Index.

Pillar	Weight %	Number of variables		
		N	Quantitative	Qualitative
1. Institutions	8.30	26	11	15
2. Infraestructure	8.30	12	6	6
3. ICT adoption	8.30	5	5	0
4. Macroeconomic stability	8.30	2	2	0
5. Health	8.30	1	1	0
6. Skills	8.30	9	3	6
7. Product market	8.30	7	4	3
8. Labor market	8.30	12	3	9
9. Financial system	8.30	9	6	3
10. Market size	8.30	2	2	0
11. Dynamism in business	8.30	8	4	4
12. Innovation capacity	8.30	10	6	4
Total variables		**103**	**53**	**50**

Source: Self-elaborated based on Schwab (2018).

group's competitiveness. The clustering was carried out using the 12 pillars of competitiveness as variables to group 141 countries.

The hierarchical clustering method was used, applying the squared Euclidean distance and Ward's method (Mendenhall *et al.*, 2010). Tests were conducted with 3, 4, and 5 groups; three groups were selected because they showed the greatest difference with the other groups. To test for differences, the ANOVA test was performed to compare the means of each group, which revealed statistically significant differences.

The analysis for Mexico was conducted by comparing the country's performance with the results of its respective group and with the overall results. Mexico's ranking of the pillars of competitiveness was ordered from highest to lowest to identify the factors in which Mexico is least competitive.

RESULTS AND DISCUSSION

Analysis of international competitiveness

The Global Competitiveness Index (GCI) for 2019 ranks Singapore as the most competitive country, with a population of 5.6 million in 2019, scoring above 70% across all competitiveness pillars. According to the World Bank (2023), for that year, 89% of its population had access to the internet, 100% had access to electricity, and its literacy rate was 97%.

In 2019, the Singaporean government allocated 19% of its total spending to education, compared to around 30% from 2011 to 2013. In contrast, the least

competitive country was Chad, Africa, with a score below 45% in 11 of 12 pillars. The GCI top ten is consistent with the World Competitiveness Report (WCR) in seven countries and with the International Competitiveness Index (ICI) in six (Table 2).

Table 2. Most competitive countries according to each indicator.

GCI			WCR			ICI	
Range	Country	Sc	Range	Country	Range	Contry
1	Singapore	84.8	1	Singapore	1	Finland
2	USA	83.7	2	Hong Kong	2	Norway
3	Hong Kong	83.1	3	USA	3	Swiss
4	Holland	82.4	4	Swiss	4	Holland
5	Swiss	82.3	5	United Arab Emirates	5	Denmark
6	Japan	82.3	6	Holland	6	Ireland
7	Germany	81.8	7	Ireland	7	United Kingdom
8	Sweden	81.2	8	Denmark	8	Sweden
9	United Kingdom	81.2	9	Sweden	9	Japan
10	Denmark	81.2	10	Qatar	10	Canada
46 of 141	Mexico	64.9	50 of 63	Mexico	39 of 43	Mexico

Source: Self-elaboration based on the Mexican Institute for Competitiveness (2019), Schwab (2019), and the Mexican Institute for Competitiveness (2019).

Each index uses a different methodology and measures a different number of economies, so a country's advantageous position in one ranking does not mean it is more competitive than a country in a lower position in another ranking. In other words, a direct comparison between indicators is not possible. However, all three indexes highlight the importance of education, institutions, and economic policies in achieving competitiveness.

Figure 1 shows the descriptive statistics of the GCI, and it is observed that the distance between countries is most evident in innovation capacity, in which Germany is a leader. Some of the criteria considered in this pillar are research and development (R&D) expenditure, patents, scientific publications, and the prominence of institutions. In this regard, R&D World (2022) reported that in monetary terms, China is the country that invests the most in research, investing more than 2.1% of its GDP in 2022. On the other hand, in relative terms, Israel is the one that invests the highest percentage of its GDP, with 4.8% in 2022.

The same figure shows that Asian countries lead in several competitiveness factors: Singapore leads in the infrastructure and labor market pillars, while Hong Kong leads in goods and financial markets, China leads in market size, and Korea leads in ICT adoption. On the other hand, European countries are more efficient in institutions, education, and innovation capacity.
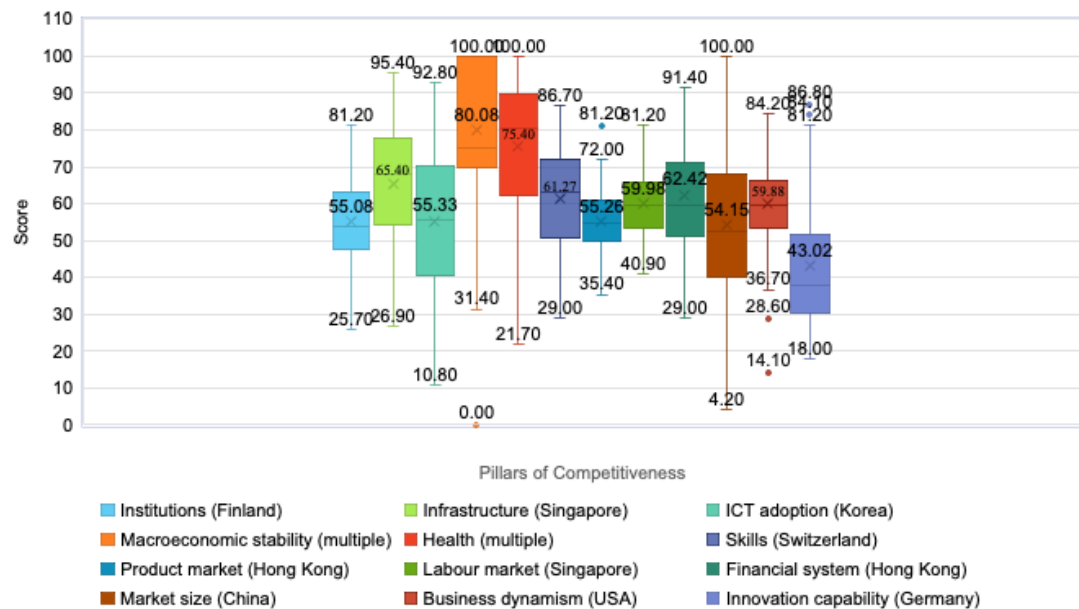
Figure 1. GCI–WEF descriptive statistics.
The leading country in each pillar is indicated in parentheses.
Source: Self-elaborated based on Schwab (2019).

Likewise, the Global Competitiveness Index showed that, at one extreme, there are countries with macroeconomic stability and market size scores of 100%, and at the other, countries with scores between 0% and 4.20% in the same pillars, indicating the disparity between economies (Figure 1). Macroeconomic stability depends on a country's control over its inflation levels. For example, Venezuela is the country that reported a score of zero in this pillar due to its uncontrolled inflation.

Figure 2, which reports countries with high inflation, shows that the inflation rates recorded by Argentina and Turkey are substantially higher. The other three economies remain at constant inflation rates, except for 2022. However, inflation had a global impact in that year, with consequences for all countries. For Mexico, these effects were smaller compared to the rest of the world.

Based on the twelve pillars of competitiveness, a hierarchical cluster analysis was conducted, allowing countries that share similarities across the GCI pillars of competitiveness to be grouped together. It was found that segmentation into three groups showed the greatest differences among them. Each group was named according to its level of competitiveness (Table 3). The three groups scored highest on the macroeconomic stability pillar and the lowest on innovation capacity.

There is a smaller gap between the three groups in the pillars of the goods market and the labor market (Figure 3). The variables considered within these pillars are
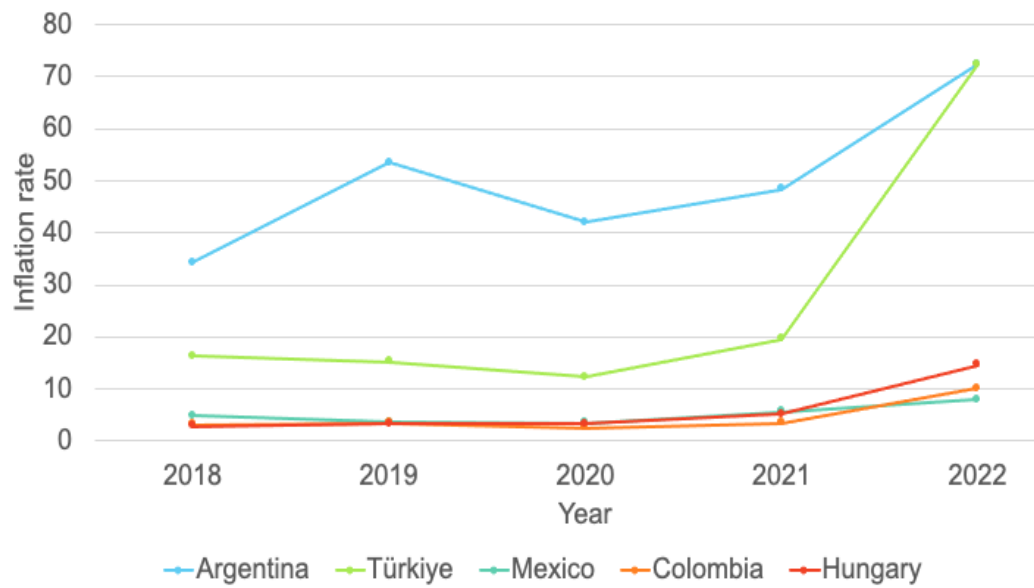
Figure 2. OECD countries with the highest inflation.
Source: Self-elaborated based on OECD (2023b).

Table 3. Cluster analysis of the 141 economies considering the 12 pillars of competitiveness.

Pillar of competitiveness	High (n=47)	Average (n= 63)	Low (n=31)	F	P
Institutions	67.82 ± 6.3[a]	51.86 ±7.90[b]	42.3 ± 6.71[c]	137.9	.000
Infrastructure	82.42 ± 7.14[a]	64.66 ± 6.95[b]	41.08 ± 7.47[c]	312.8	.000
ICT adoption	75.46 ± 11[a]	52.73 ± 8.03[b]	30.08 ± 9.82[c]	202.49	.000
Macroeconomic stability	97.6 ± 12.17[a]	75.35 ± 4.7[b]	63.13 ± 16.9[c]	90.91	.000
Health	89.80 ± 10.68[a]	77.59 ± 8.6[b]	49.14 ± 11.76[c]	148.35	.000
Education and skills	75.92 ± 7.43[a]	60.15 ± 6.15[b]	41.34 ± 7.91[c]	220.29	.000
goods market	63.29 ± 5.49[a]	53.52 ± 6.48[b]	46.62 ± 5.78[c]	79.5	.000
Labor market	68.26 ± 6.03[a]	57.9 ± 6.5[b]	51.65 ± 5.43[c]	76.68	.000
Financial system	75.66 ± 8.25[a]	60.61 ± 11.6[b]	46.02 ± 5.6[c]	102.08	.000
Market size	66.23 ± 16.33[a]	51.27 ± 14.79[b]	41.68 ±14.4[c]	25.64	.000
Business dynamisms	70.34 ± 6.73[a]	57.94 ± 6.93[b]	47.96 ±10.33[c]	82.13	.000
Innovation capacity	62.90 ± 6.05[a]	35.81 ± 13.8[b]	27.55 ± 4.44[c]	173.79	.000

Different literals represent statistically significant differences at 0.05%.
Source: Self-elaborated.

related to labor and economic policies such as labor rights, dismissal costs, economic barriers, and taxes and subsidies.

Some of these policies can generate advantages for countries, as they encourage other nations seeking to reduce production costs to relocate manufacturing operations
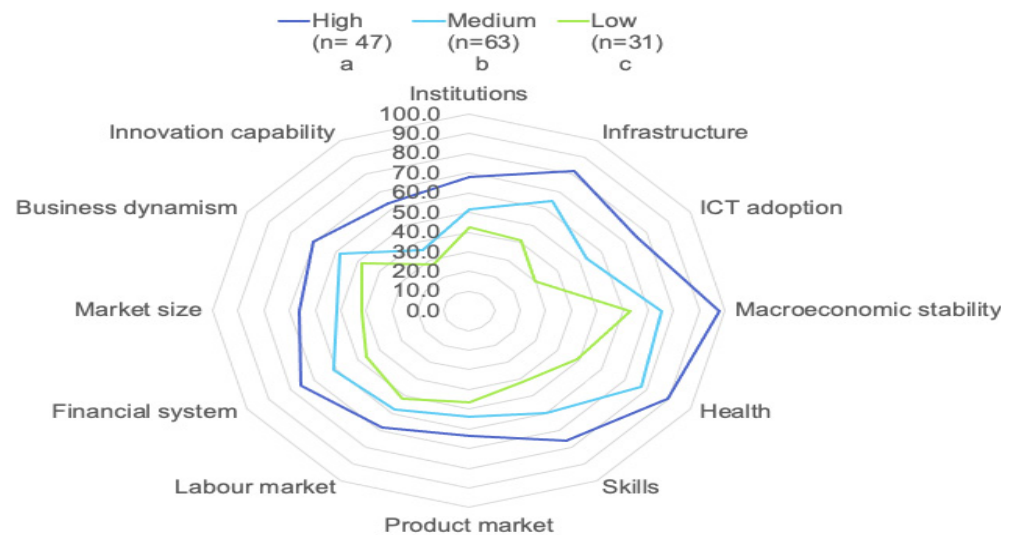
Figure 3. Comparison of the three groups with different levels of competitiveness.
Different literals represent statistically significant differences at 0.05%.
Source: Self-elaborated.

to countries with labor flexibility. Roldan (2000) describes this type of competitiveness as "spurious" or passive and explains that it occurs when a government overexploits natural and human resources or implements tariff or subsidy policies solely to reduce the cost of domestic production.

The greatest gap between groups is observed in ICT adoption, health, and innovation capacity. The first two relate to a country's infrastructure and service capacity, that is, access to and availability of telecommunications and health services. Innovation capacity focuses on each country's ability to invest in the generation of skills and knowledge. Arredondo *et al.* (2016) determined that for Latin America, the variables that have the greatest influence on the innovation pillar are: capacity to innovate, quality of research institutions, government acquisition of advanced technology, and availability of scientists and engineers. Figure 4 shows the countries that comprise each cluster.

The high competitiveness group reflects the policy and resource orientation of advanced economies. On the one hand, their institutions are more transparent; on the other, their pillars of education, health, and infrastructure demonstrate that they provide basic services to their populations. These economies can afford to increase the quality of their teaching and research institutions and allocate more resources to the latter. However, this premise does not apply to all countries in the group, as China's competitiveness is determined by the size of its market (GDP in terms of purchasing power and imports of goods and services) and macroeconomic stability (inflation percentage and debt dynamics), not by the components.
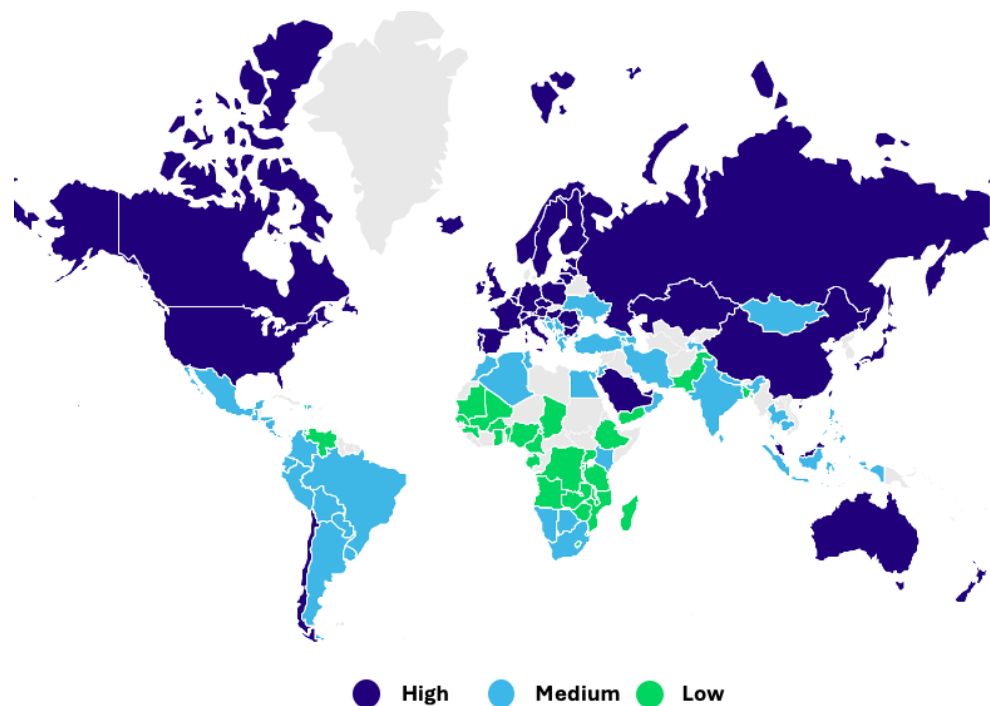
Figure 4. Countries that make up the clusters.
Source: Self-elaborated.

The medium competitiveness group has its highest scores in macroeconomic stability and health, while its lowest scores were in innovation capacity and ICT adoption. This group shows that policies are geared toward promoting the economy and meeting the basic needs of its population. In this regard, Melara-Gálvez & Morales-Fernández (2022) in the GCI analysis they made for the countries belonging to Central America, reported that the governments in the countries they analyzed should prioritize their intervention in the pillars of macroeconomic stability, infrastructure, health, ICT adoption and financial system.

The low competitiveness group is made up of 31 predominantly African countries. Ten of the 12 pillars in this cluster have scores below 50%. This indicates that these countries lack the capacity to meet their population's needs, such as health, education, and employment, and therefore focus their supply on cheap labor.

Although the indicator addresses social variables, its focus is on improving business sector productivity as the driving force of the economy. Environmental legislation is not considered, nor is it criticized for countries that maintain illegitimate competitiveness through export subsidies and import tariffs.

Finally, the labor market pillar is composed of 12 variables, three quantitative and nine qualitative, that indicate that to be competitive in this area, one must be flexible in hiring and firing practices, salary allocation, and the hiring of foreign labor,

among others. This suggests a discrepancy between what the business sector considers competitive and labor rights.

Outlook for Mexico

Figure 5 presents Mexico's score and ranking position, the group to which the country belongs, and the overall scores for each of the GCI pillars. Although the country has higher scores than the global average in seven pillars, it is not among the top performers in the ranking. Mexico is ranked 11th thanks to its GDP performance and the proportion of imported goods and services relative to GDP.
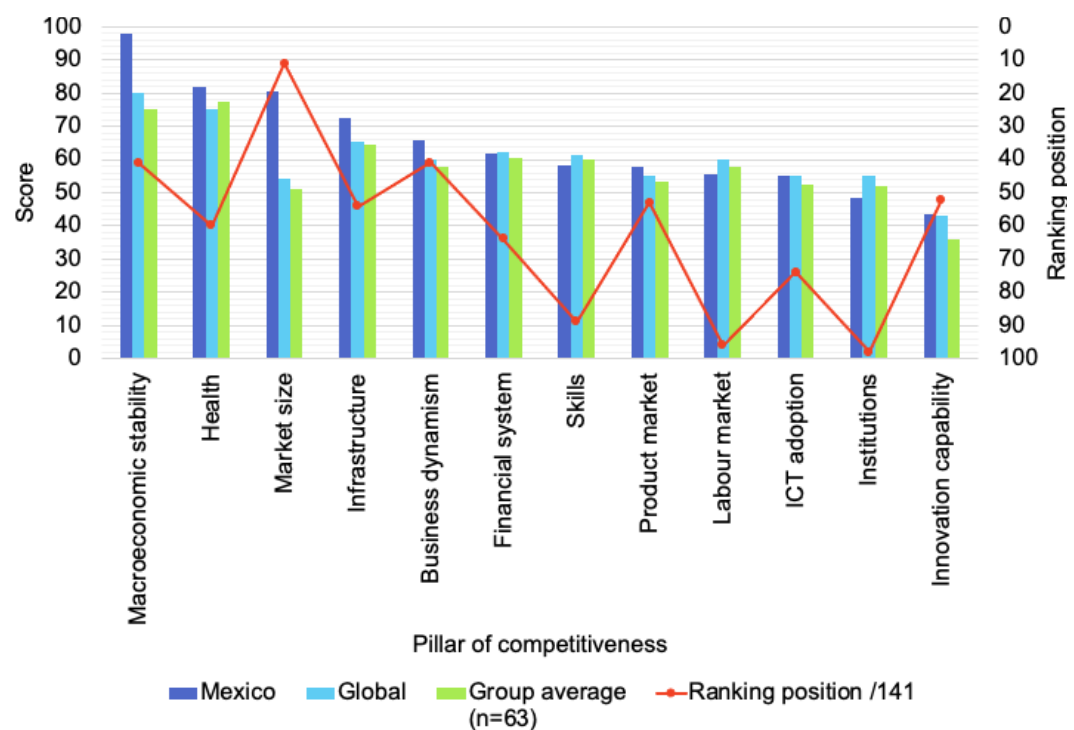

Figure 5. Comparison of Mexico's GCI score with respect to the global score and its group. Source: Self-elaborated.

The country showed positive performance in macroeconomic stability, which, for GCI purposes, depends on inflation and debt dynamics. Over the last decade, GDP has remained steady; however, Figure 6 shows a decrease between 2019 and 2020 compared to the previous year, as did imports and exports. However, imports decreased more than exports, thanks to Mexico's continued exports of fruit and vegetable products to the United States.
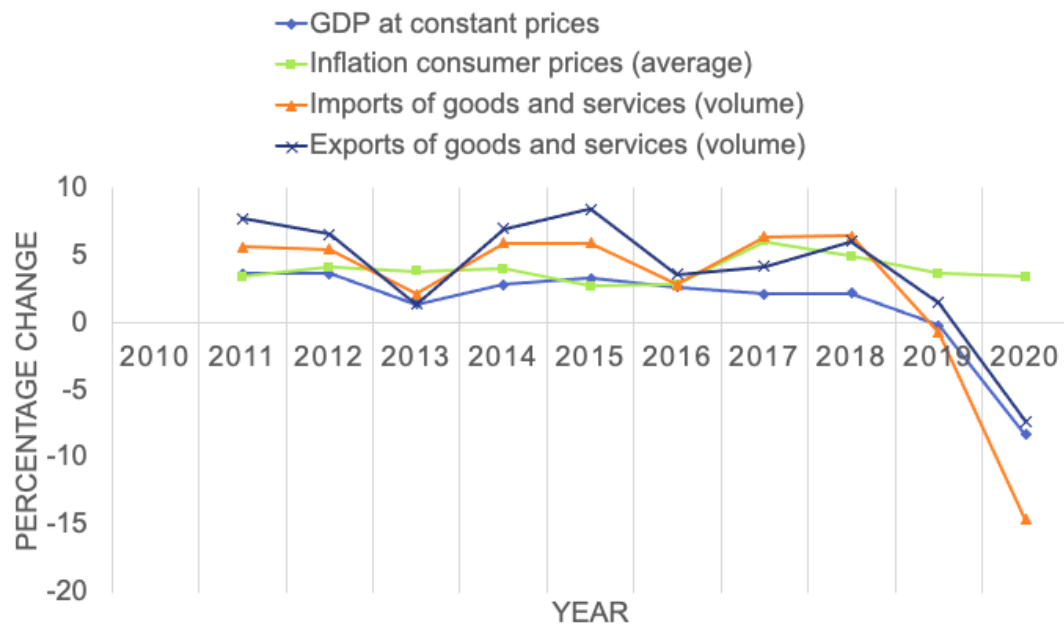
Figure 6. Changes in Mexico's GDP and its components, 2010-2020.
Source: Self-elaborated with data of the International Monetary Fund (2020).

Mexico ranks lowest in the Institutions (98), Labor Market (96), and Education and Skills (89) pillars (Figure 5). The results in the Institutions pillar are driven by the business sector's perceptions of security, judicial independence, government efficiency, corruption, and government vision, among others. According to Transparency International (2021), Mexico has one of the highest corruption perception indices (Figure 7). In 2021, it was ranked 130 out of 180 countries with a score of 29 out of 100 (0 being high corruption and 100 being no corruption). At the other extreme is Denmark, the country with the lowest perception of corruption with a score of 88/100.

Trust in government is another indicator related to institutions and refers to the proportion of people who report having confidence in the national government. The data shown in Figure 7 reflect the proportion of respondents who answered yes to the question: In this country, do you have confidence in the national government? Unlike the previous indicator, Mexico shows an increase in confidence in its government since 2018.

Regarding the labor market pillar, the result is due to the low scores it received in the following areas: how much it costs to fire a worker; hiring and firing practices; and active labor market policies. Regarding the education and skills pillar, Mexico's results are based on average years of schooling, graduates' skills, and the ease of finding qualified employees. As mentioned above, most of this data comes from the executive opinion survey conducted with the business sector.
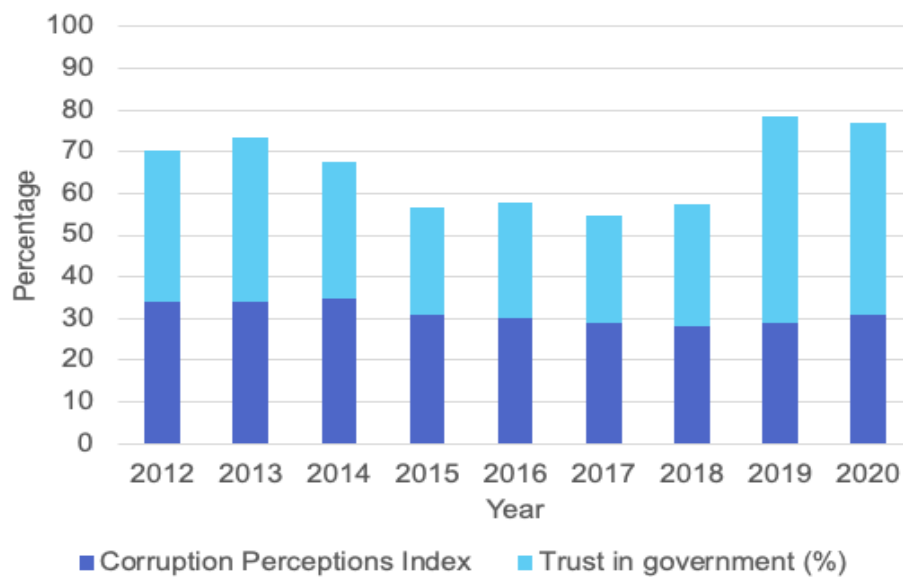
Figure 7. Confidence in government and corruption perception index.
Source: Self-elaborated with data the Transparency International (2021) and OCDE (2022).

In addition to implementing public policy interventions in these three pillars, it is important to emphasize the pillar with the lowest score: innovation capacity. Similarly, Gocłowska-Bolek (2022), in the comparison she makes between Mexico and Poland based on the GCI, recommends that to increase the competitiveness of both economies, innovation should be stimulated.

Like the countries in the medium and low competitiveness groups, Mexico showed weaknesses in the areas related to innovation: ICT adoption and innovation capacity (Figure 5). The innovation capacity pillar refers to workforce diversity, investment in research and development, buyer sophistication, and trademark applications. Figure 8 shows the countries that allocate the largest percentage of their GDP to research; Mexico allocates less than 0.5%.

Regarding ICT adoption, the variable considers access to telecommunications. According to the International Telecommunication Union (2020), in 2000, while Mexico had six percent of internet users, the US was approaching half of its population using this technology. This gap widened over the following decade, but by 2020 the gap was much smaller: 71.97% of Mexicans used the internet compared to 90.9% in the USA. Mobile phones and television are the most widely used technologies (Table 4), which can be used as tools for disseminating knowledge.

Furthermore, it was identified that Mexico's competitive position is limited by the results of the executive opinion survey and by the lack of variables related to social and environmental aspects. However, this analysis provides a framework for action to
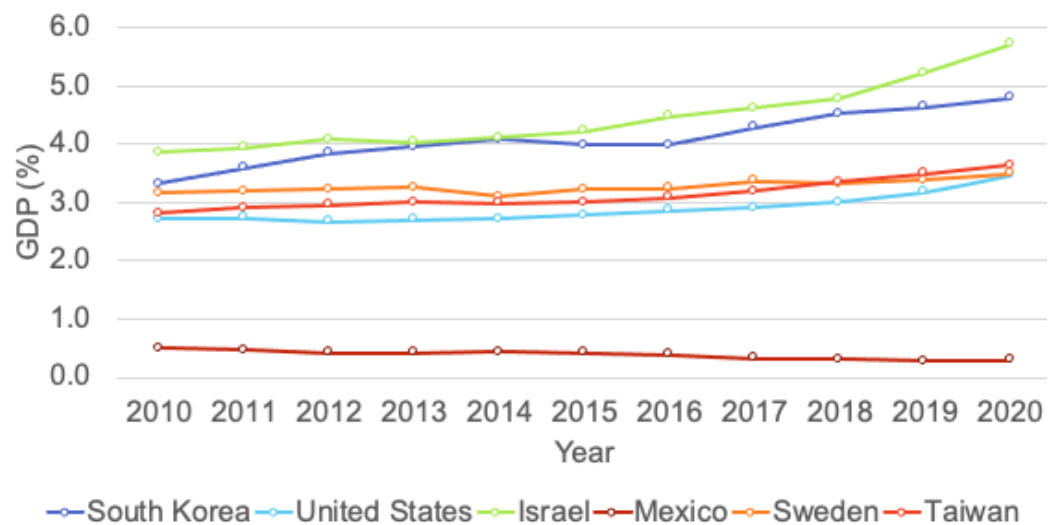
Figure 8. Research and development (R&D) expenditures.
Source: Self-elaborated with data the OCDE (2023a).

Table 4. Access of the Mexican urban population to telecommunications.

Technology	Percentage of households with:	Percentage of people who use:
Radio	53.9	
Television	92.5	
Landline telephone	39.5	
Cellular mobile phone	89.	75.1
Computer	44.2	43
Internet access	60.6	72

Source: Self-elaborated with data from the International Telecommunication Union (2020).

improve business productivity in the long term. The need to improve the quality of institutions, increase investment in research, and intervene in the current educational model to train professionals with more digital skills is highlighted. Addressing these aspects could allow Mexico to improve its position in the GCI competitiveness ranking, although in practice this would not guarantee greater real competitiveness.

Technological development in Mexico faces significant challenges, as increased investment in research does not guarantee technological progress. To achieve positive results, it is necessary to combine access to knowledge with adequate infrastructure and qualified social capital (Fagerberg *et al.*, 2007). Furthermore, domestic technological development may lag that of developed countries. According to Aghion and Howitt (2009), there is a monopoly on technological development that can limit the impact of

national efforts in this area. Likewise, there is little coordination between key players such as universities, the government, and the private sector (Moreno-Brid *et al.*, 2018).

Conclusions

The most common definition of competitiveness relates to market positioning, but a broader definition requires considering other elements such as institutions, policies, and technological development for a country to be considered competitive. The Global Competitiveness Index, in addition to comparing the efficiency of governments across nations, also identified deficiencies in each country's policies and administration.

In this way, the most competitive countries, once their population's basic needs are met, use their resources for technological development, which will give them an advantage in the long term, in addition to providing other countries with the technology they cannot produce. Medium-competitive countries have policies geared toward providing services, but they do not promote industrial development. Low-competitiveness countries find themselves in a paradox regarding the efficient use of their resources, as they must decide which of their population's demands they can address first: health, education, infrastructure, etc.

It's worth noting that innovation capacity is the factor that separates advanced economies from emerging ones; it's a tangible and promising outcome, as the fourth industrial revolution demands countries, companies, and workers with different types of capabilities. In the case of Mexico, actions aimed at improving productivity through innovation must be carried out with a long-term vision, since at present it is not possible to achieve the technological development of developed countries. Therefore, resources must be directed toward improving the population's educational levels and their capacity to adopt new technologies. This requires an institutional component with a renewed development vision.

In summary, the limitation of this work is that the most recent information available is for 2019, so it is recommended to compare it with the next GCI publication to determine the effects of the pandemic. It is also recommended to apply other methodologies for competitiveness analysis and include other variables such as environmental policies to conclude whether a country is competitive or not.

Finally, given that the most recent information available corresponds to 2019, which may be a limitation for a broader understanding of the Mexican economy's competitiveness in the global context, it is recommended to compare it with the next GCI publication to determine the effects of concurrent, non-continuous phenomena such as the COVID-19 pandemic. Future analyses recommend including other variables, such as environmental policies, to determine the degree of competitiveness of the national economy.

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